CERTIFICATE OF MAILING BY "EXPRESS MAIL" (37 CFR 1.10) Applicant(s):			Docket No. 01-180	
Application No. 10/001,730	Filing Date November 2, 2001	Examiner Kuhns, Allan R.	Customer No. 30058	Group Art Unit 1732

Invention: A COMPOSITION FOR MAKING EXTRUDED SHAPES AND A METHOD FOR MAKING SUCH COMPOSITION

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Application Number	10/001,730
Filing Date	November 2, 2001
First Named Inventor	Kevin A. Seiling
Art Unit	1732
Examiner Name	Kuhns, Allan R.
Attorney Docket Number	01-180

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	
Kevin A. Seiling	
Serial No. 10/001,730	**A COMPOSITION FOR MAKING EXTRUDED SHAPES AND A METHOD FOR MAKING SUCH COMPOSITION**
Filed: November 2, 2001	
Art Unit: 1732	
Patent Examiner: Kuhns, Allan R.	
Our Ref: 01-180	

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May 17, 2005

REPLY BRIEF

In reply to the Examiner's Answer in the above-captioned matter, Applicant submits this Reply Brief.

As specifically set forth in Applicant's Amended Appeal Brief and elsewhere in the prosecution of the subject application, Claims 1-3, 5 and 18-28 are patentable over the Nomura and Crabtree references for the reason that they require "a polymer material [that is] extruded to have internal closed cells" in combination with "glass fibers that are imbedded in the closed cell polymer material" and that have "a fiber length in the range of 50 to 900 microns". The Examiner's Answer identifies nothing in Nomura or Crabtree that makes such a combination unpatentable.

Claims 1-3, 5 and 18-28 are directed to a composition having glass fibers that are imbedded in a closed cell structure. The Official Action relies primarily on Nomura - a composition having an open cell structure and glass fibers that are generally much longer than the range of Claims 1-3, 5 and 18-28. How is a composition with relatively short fibers and a closed cell structure obvious from a composition having longer fibers and open cells? It isn't.

The Examiner's Answer argues that one of ordinary skill in the art would rely on 1.4% of the lower end of a range of glass fibers that are mentioned in Nomura.[1] But, is that even sufficient? No. The Examiner's Answer must further suppose that, contrary to the teachings of Nomura, one skilled in the art could use the shorter fibers exclusively and then (in an undetermined way and for an unstated reason) change the open cell structure of Nomura into a closed cell structure.

Even assuming that this could be done, the only argument that the Examiner's Answer makes in support of doing this is that acoustic materials (not structural materials) as used in Crabtree can be open cell or closed cell. Is there anything in the Examiner's Answer to explain why one of ordinary skill in the art would consider substituting acoustical materials for structural materials? No. Is there anything in the Examiner's Answer to explain how either Nomura or Crabtree would show one skilled in the art how to transform the open cell structural material in Nomura into a closed cell structural material? No. Is there anything in the Examiner's Answer to explain how one skilled in the art would conclude that Crabtree's indifference to open cell versus closed cell structure for an acoustic material is also applicable to the structural material of Nomura? No.

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[1] See discussion at pages 4-5.

The Examiner's Answer inadequately and improperly attempts to address all of the shortcomings previously mentioned by merely stating that the composition of Crabtree and the composition of Nomura can both be used in automobiles! Following this to its illogical conclusion would support the combination of the physical or chemical properties from any two materials, provided only that they can be found in automobile parts!

> As [the Federal Court] outlined in *Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 1275 [69 USPQ2d 1686] (Fed. Cir. 2004), in making the assessment of differences between the prior art and the claimed subject matter, section 103 specifically requires consideration of the claimed invention "as a whole." Inventions typically are new combinations of existing principles or features. *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698 [218 USPQ 865] (Fed. Cir. 1983) (noting that "virtually all [inventions] are combinations of old elements"). The "as a whole" instruction in title 35 prevents evaluation of the invention part by part. *Ruiz*, 357 F.3d at 1275. Without this important requirement, an obviousness assessment might successfully break an invention into its component parts, then find a prior art reference corresponding to each component. *Id.* This line of reasoning would import hindsight into the obviousness determination by using the invention as a roadmap to find its prior art components. Further, this improper method would discount the value of combining various existing features or principles in a new way to achieve a new result - often the essence of invention. *Id.*
>
> Contrary to this reasoning, section 103 requires assessment of the invention as a whole. *Id.* This "as a whole" assessment of the invention requires a showing that an artisan of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would have selected the various elements from the prior art and combined them in the claimed manner. *Id.* In other words, section 103 requires some suggestion or motivation, before the invention itself, to make the new combination. *See In re Rouffet*, 149 F.3d 1350, 1355-56 [47 USPQ2d 1453] (Fed. Cir. 1998).

Princeton Biochemicals, Inc. v. Beckman Coulter, Inc., 75 U.S.P.Q. 2d 1051 (Fed. Cir. 2005).

In contrast to the Applicant's claims, the moldings made according to Nomura are specifically said to have "an open cellular structure." (Nomura, Col. 8, lines 63-68). In Nomura,

the injected gas participates in the formation of an internal hollow area and also in the formation of gas permeable pores in the moldings. (Nomura, Col. 14, lines 10-12). When the gas is introduced to the mold, it permeates through the foamed cell walls to disperse throughout the molding. (Nomura, Col. 14, lines 3-12). According to Nomura, the "air permeable pores ... do not have a macroscopically detectable, definite, hollow area but are so constructed that gas is permeable through the structure of the moldings." (Nomura, Col. 15, lines 53-57).

Thus, the Nomura molding is comprised of gas-permeable walls that have an "open cellular structure." Nomura does not describe or suggest "closed cell polymer materials" as required by Claim 1. In Nomura, the gas-permeable walls allow the gas that is injected to permeate through the cell walls and easily disperse throughout the molding. Thus, the Nomura molding has a large number of pores and the gas that is injected substantially participates in the formation of the pores as well as the formation of the internal hollow area of the molding. (Nomura, Col. 14, lines 2-13; Col. 15, lines 53-57).

The glass fibers in Nomura are generally much longer than the 50-900 micron range of Claims 1-3, 5 and 18-28. Presumably, this is owing to the fact that Nomura is an open cell polymer material that requires longer fibers for mechanical strength. Nomura describes an open cell material that has glass fibers with a fiber length that is substantially longer than Applicant's range.

Even though the claimed invention falls within a range that is disclosed in the prior art, the claimed invention is still patentable if the prior art taught away from the claimed invention. *Iron Grip Barbell Co. v. USA Sports, Inc.*, 73 USPQ2d 1225 (Fed. Cir,. 2004). In its broadest statement of range, Nomura describes fiber lengths in the range of 200-50,000 microns wherein more than 98% of that range is greater than the range of Claim 1. (Nomura, Col. 11, lines 43-

45). The lower 1.4% of the range in Nomura partially overlaps the upper portion of the range specified in Claim 1, but Nomura generally teaches the use of much longer fibers – in the range of 2,000-50,000 microns. (Nomura, Col. 4, lines 40-42, 64-65; Col. 7, lines 66-67; Col. 8, lines 1-2; Col. 11, lines 49-51, and Col. 11, lines 57-58). That longer range is completely above and does not overlap the 50 to 900 micron range of Claim 1. According to Nomura, the most preferred range is 2,000 - 15,000 microns (Col. 9, lines 8-10) or 1,000 - 20,000 microns (Col. 16, lines 4-6). Nomura teaches that the fibers are as long as 50,000 microns to support moldability (Nomura, Col. 11, lines 43-45). All the examples that are described in Nomura use longer fibers wherein the fiber length is 3,000 to 12,000 microns (Nomura, Col. 16, line 25-Col. 18, line 39). That is more than three to thirteen times the upper limit of the range of fiber length in Claim 1.

Claim 1 claims a closed cell composition having glass fibers in the range of 50-900 microns. However, Nomura describes the use of glass fibers in an open cell polymer and that are generally 2,000-50,000 microns - more than twice the maximum fiber length of Claim 1. Accordingly, Nomura teaches away from the use of shorter fibers in the range of Claims 1-3, 5 and 18-28 so that those claims are patentable notwithstanding a minor overlap in ranges of fiber length.

Crabtree is directed to an acoustic material that does not even have imbedded glass fibers. Nothing in the Examiner's Answer supports the notion that, considering the invention of Claims 1-3, 5 and 18-28 as a whole at the time that the invention was made, a normally skilled artisan would have been led to select glass fibers having the shorter fiber length than is specified in the Applicant's claims. Moreover, there was no motivation to combine an open cell structural material with a closed cell acoustic material. Accordingly, Claim 1 is patentable over the Nomura and Crabtree references.

Crabtree does not support the notion that closed cell and open cell resins are interchangeable for non-acoustic applications. Crabtree states that various types of acoustic foaming material can be sandwiched between the layers of foil coated craft board. (Crabtree, Col. 3, lines 14-15 and 52-54). Crabtree is indifferent as to cell structure for the acoustic foaming material. The acoustic foaming material can be either open cell or closed cell and either flexible or rigid. (Crabtree, Col. 3, lines 52-58). Crabtree has no teaching or suggestion that the acoustic foaming material includes glass fibers or that such fibers in an acoustic material would serve any purpose or advantage.

Nothing in Crabtree describes or suggests how or why a closed cell foaming material that is without glass fibers and that is used for acoustic purposes can be properly substituted for the thermoplastic resin of Nomura which specifically requires an open cell structure to allow injected gas to disperse throughout the molding and relatively long glass fibers to sustain mechanical strength. Nothing in either reference suggests that one skilled in the art would suppose that selected portions of the acoustical member in Crabtree could be substituted into the structural member of Nomura.

Nothing in Crabtree suggests that any of the closed cell acoustic materials mentioned therein can be successfully substituted for open cell structural materials. The combination proposed by the Official Action is actually contrary to Nomura! The use of closed cell polymer material as a structural member appears only in the Applicant's teachings. Crabtree merely states that for the acoustic filler that is therein described, either an open cell or closed cell structure will suffice. Crabtree simply does not support the notion that polyvinyl resin materials, whether closed cell or open cell, are interchangeable without regard to intended application. Particularly, no teaching of Crabtree supports selectively ignoring Nomura's instruction to use an open cell

material. It is improper to substitute the closed cell acoustic material of Crabtree for the open cell structural material of Nomura when Nomura expressly teaches that an open cell composition is to be used!

Even if the Nomura and Crabtree references could be properly combined (which they can't) the claimed invention still would not result. Claims 1-3, 5 and 18-28 require that the "glass fibers are imbedded in the closed cell polymer material." Even if the closed cell acoustic material of Crabtree were a proper basis for re-making the open cell structural material of Nomura into a closed cell material, nothing in Nomura suggests that the fibers that are therein disclosed would be "imbedded in the ... polymer material" as required by the Claims.

In Nomura, the long fiber length and open cell structure infers that the fibers are not imbedded within the cell structure. Certainly, there is no teaching in Nomura that the fibers are so imbedded in the cell structure. Presumably, at the longer fiber lengths of Nomura, the fibers are not imbedded in the cell structure - whether that structure is open or closed.

The Claims require that the fibers be imbedded within the closed cell, not spanning between cells as they would in an open cell structure. Nomura teaches only open cell structure and Crabtree does not even teach the use of glass fibers. Therefore, neither the Nomura nor the Crabtree references, either alone or in combination, can be properly said to teach glass fibers that are imbedded in the cell structure of Claims 1-3, 5 and 18-28. Accordingly, the Claims are patentable over those references for this reason in addition to the other reasons stated herein.

In accordance with the foregoing comments, Claims 1-3, 5 and 18-28 are patentable over the Nomura and Crabtree references, either alone or in combination. If the Commissioner determines that a fee is required, the Examiner is authorized to charge any required fee to Deposit Account No. 03-2026.

Respectfully submitted,

By

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